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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Navneet Malpani

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KONRAD RAYNES & VICTOR, LLP.

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EXAMINER

CHU, WUTCHUNG

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,349	Applicant(s) MALPANI ET AL.	
	Examiner WUTCHUNG CHU	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9-16,19-22,24-31,34-37 and 39-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-7, 9-16, 19-22, 24-31, 34-37, and 39-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This communication is in response to application's amendment filed on 1/14/2008.

- Claims 1, 4-7, 9-16, 19-22, 24-31, 34-37, and 39-45 are pending in the application.
- Claims 1, 4, 5, 6, 9, 11, 12, 13, 16, 19, 20, 21, 24, 26, 27, 28, 31, 34, 35, 36, 39, 41, 42, and 43 have been amended.
- Claims 2-3, 8, 17-18, 23, 32-33, and 38 have been cancelled.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 31-45 are rejected under 35 U.S.C. 101 because the claimed invention is direction to non-statutory subject matter.

Regarding claims 31, 35, and 42 are non-statutory because an article of manufacture is a computer program product per se and therefore fails to fall within a statutory category under 101. **Claims 34, 36-37, 39-41, and 43-45**, are also rejected since they depend from claims 31, 35, and 42 and contain the same deficiency.

Since a computer program is merely a set an instructions capable of being executed by a computer, the computer program itself is not a process. In contest, a claimed computer-

readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Therefore, it is suggested the claims to be written as in terms of computer readable medium, stored with, embodied with or encoded with a computer program or computer executable instructions.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 31-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 31, 35, and 42 are rejected under 35 USC 112 2nd. claim 31, 35, and 42 claims "article of manufacture" is vague and indefinite because there is no medium storing/embodied the instructions/article. A medium can have instructions stored on it, recorded on it. Claims 34, 36-37, 39-41, and 43-45 are also rejected since they depend from claim 26 and contain the same deficiency.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 12-15, 27-30, 42-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (6081511).

Regarding claim 12, Carr et al. disclose load sharing for redundant networks (see Carr et al. column 4 lines 21-26) comprising:

- Intercepting a command issued to a target (see Carr et al. col. 6 lines 29-45 and col. 18 lines 59-60);
- determining whether a command is capable of being routed through a first network adapter (see Carr et al. column 6 lines 31 bridge board A) in a network adapter team (see Carr et al. figure 2A bridge board A, B, and C) to the target (see Carr et al. col. 6 lines 29-30);
- routing the command through the first network adapter in response to determining that the command is capable of being routed through the first network adapter (see Carr et al. column 6 lines 29-45); and
- routing the command through a second network adapter in the network adapter team (see Carr et al. figure 2A bridge board A, B, and C) in response to determining that the command is not capable of being routed through the first network adapter (see Carr et al. column 4 line 42-46); and
- determining whether to switch between failover mode and failover and load balancing mode based on load balancing shares of data paths between the network adapters in the network adapter team and the target (see Carr et al. col.

18 lines 46-58), wherein, when one data path has a hundred percent load balancing share, then failover mode is used **(see Carr et al. col. 19 lines 11-12)**.

Regarding claim 13, Carr et al. teach the determination of whether a command may be routed through a first network adapter determines whether an indication that the first network adapter failed was received **(see Carr et al. column 19 line 16-35)**.

Regarding claim 14, Carr et al. teach routing the command further comprises: forwarding the command to a low level driver with an indication of the selected network adapter **(see Carr et al. column 9 line 23-25)**.

Regarding claim 15, Carr et al. teach further comprising: performing load balancing between the first network adapter and the second network adapter when both network adapters are available **(see Carr et al. column 9 line 15-21 and line 31-39)**.

Regarding claims 27-30 and 42-45, Carr et al. teaches device and software **(see Carr et al. column 4 line 21-35 and column 9 line 25 bridging board and column 9 line 4 backplane buses and column 20 line 22-45 software)** and disclose all the limitations as discussed in the rejection of claims 12-15 and are therefore claims 27-30 and 42-45 are rejected using the same rationales.

Claim Rejections - 35 USC § 103

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2619

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4, 16, 19, 31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prager et al., hereinafter Prager, (US7310341).

Regarding claim 1, Prager disclose a system and method for parallel connection selection in a communication network (see Prager col. 63-67) comprising:

- Receiving a list of the data paths in the network adapter team (**see Prager col. 7 lines 1-4**), a total number of bytes transferred by the network adapter team (**see Prager col. 8 lines 26-27**), a load balancing share of each data path (**see Prager col. 8 lines 42-44**), and;
- For each data path in a network data team, computing a load balancing value (**see Prager col. 8 lines 42-43**) by;
- Dividing the total number of bytes by the number of bytes transferred on the data path to generate a first value (**see Prager col. 8 line 35 equation BW proposed call/ max BW configured for TGi**); and

- Multiplying the first value by the load balancing share of the data path (**see Prager col. 8 lines 45 percentage where it is inherent for multiplying the load balancing value by 100% to present as in percentage**);
- Determining a maximum value of the computer load balancing values((**see Prager col. 8 line 64-65**); and
- Selecting a data path with the maximum value for use in routing data (**see Prager col. 8 line 64-65**).

Prager disclose all the subject matter of the claimed invention with the exception of:

- a number of bytes transferred on each data path

However, such limitation is obvious since Prager disclose bandwidth of the proposed call which indicates which much it would consume in the link. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the the number of bytes transferred on each data path in the system for parallel connection selection in a communication network of Prager in order to enhance system efficiency.

Regarding claims 16 and 31, Prager teaches system and software (**see Heiner et al. paragraph 9 and 33**) and disclose all the limitations as discussed in the rejection of claim 1 and is therefore claims 16 and 31 are rejected using the same rationales.

Regarding claim 4, Prager teaches the load balancing share is provided by a user (**see col. 7 line 62- col. 8 line 28 administrative factor score is assigned, which evaluates the connection and service parameters of each trunk group against the requirements of the call and also evaluate for its available BW, which a BW load balancing value is calculated for each trunk group**).

Regarding claims 19 and 34, Prager teaches system and software (**see Prager col. 3 line 60 and col. 12 line 12 software module**) and disclose all the limitations as discussed in the rejection of claims 4 and are therefore claims 19 and 34 are rejected using the same rationales.

11. Claims 5-7, 9-10, 20-22 and 24-25 and 35-37 and 39-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamura et al. (US2004/0184483).

Regarding claim 5, Okamura disclose a transmission bandwidth control device (**see Okamura et al. paragraph 19**) comprising:

- computing an actual load balancing share for each data path in a network adapter team (**see Okamura et al. paragraph 87, 89, and 232 link bandwidth WL and figure 6 box 15 load sharing control until**)
- for each data path,
 - determining whether a load balancing share for the data path in the last time frame is less than the actual load balancing share for the data path (**see Okamura et al. paragraph 131**); and
 - when the load balancing share is less than the actual load balancing share, adjusting the load balancing share of the data path (**see Okamura et al. paragraph 93 and 131**).

Okamura disclose all the subject matter of the claimed invention with the exception of:

- Dividing a number of bytes transferred on that data path by a total number of bytes transferred by the network adapter team in a last time frame.

However, such limitation is obvious since it is a way of calculating the load balance share and Okamura teaches calculating a balancing ratio (**see Okamura et al. paragraph 87, 89, and 232 link bandwidth WL and figure 6 box 15 load sharing control until**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the dividing a number of bytes transferred on that data path by a total number of bytes transferred by the network adapter team in a last time frame in the transmission bandwidth control device of Okamura in order to enhance system efficiency.

Regarding claim 6, Okamura teach adjusting the load balancing share further comprises:

- Computing a difference load balancing value for each data path in the network adapter team (**see Okamura et al. paragraph 195 and 196 residual bandwidth**) by subtracting the load balancing share of the data path from the actual load balancing share of the data path (**see Okamura paragraph 88 equation (c) $WL - (Wg + Wb)$ and paragraph 89**);
- determining whether a difference between the load balancing share and the actual load balancing share is less than a change threshold (**see Okamura et al. paragraph 131**); and

- when the difference between the load balancing share and the actual load balancing share is less than the change threshold (**see Okamura et al. paragraph 131 and 132**),
 - reducing the load balancing share of the data path (**see Okamura et al. paragraph 269**); and
 - selecting another data path based on the difference load balancing value of each data path (**see Okamura et al. paragraphs 112-113**); and
 - increasing the load balancing share of the selected data path (**see Okamura et al. paragraph 166**).

Regarding claim 7, Okamura et al. teach the load balancing share of the data path in the network adapter team with a lowest difference load balancing value (**see Okamura et al. paragraph 95 and 196**) is increased, and wherein, if multiple data paths have the lowest difference load balancing value, a data path from the multiple data paths with a highest actual load balancing share is increased (**see Okamura et al. paragraph 174**).

Regarding claim 9, Okamura et al. teach the actual load balancing share and the difference load balancing value are computed when a timer fires (**see Okamura et al. paragraph 28**).

Regarding claim 10, Okamura et al. teach further comprising: receiving a timer interval value (**see Okamura et al. paragraph 28**), a change threshold value (**see**

Okamura et al. paragraph 195 and 196 residual bandwidth), and a load balancing change percent value (**see Okamura et al. paragraph 110 ratio**).

Regarding claims 20-22 and 24-25 and 35-38 and 39-40, Okamura et al. teaches device (**see Okamura et al. figure 6 box10 network control device and figure 6 box 13 processing unit and it is inherent for processing unit to include software processing instructions**) and disclose all the limitations as discussed in the rejection of claims 5-7 and 9-10 and are therefore claims 20-22 and 24-25 and 35-38 and 39-40 are rejected using the same rationales.

12. Claims 11, 26, and 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al. in view of the background of Heiner et al. (US2004/0203827).

Regarding claim 11, Okamura et al. teach further comprising: receiving a list of data paths in the network adapter team (**see Okamura et al. paragraph 215 and figure 13 box 1106**), and disclose all the subject matter of the claimed invention with the exception of a total number of bytes transferred by the network adapter team in a last time frame, a load balancing share of each data path in the last time frame, and a number of bytes transferred on each data path in the last time frame.

The background of Heiner et al. from the same or similar fields of endeavor teaches the use of teaches the amount of packets or bytes being transferred over nodes and links thus loading them. Distributing traffic flows over multiple paths in a communication networks (**see Heiner et al. paragraph 4**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the amount

of packets or bytes being transferred over nodes and links thus loading them, and distributing traffic flows over multiple paths in a communication networks as taught by the background of Heiner et al. in the transmission bandwidth control device of Okamura et al. in order to enhance accuracy and monitoring of transmission.

Regarding claims 26 and 41, Okamura et al. and the background of Heiner et al. teaches device (see Okamura et al. figure 6 box10 network control device and figure 6 box 13 processing unit and it is inherent for processing unit to include software processing instructions) and disclose all the limitations as discussed in the rejection of claim 11 and are therefore claims 26 and 41 are rejected using the same rationales.

Response to Arguments

13. Applicant's arguments with respect to claims 1, 4-7, 9-16, 19-22, 24-31, 34-37, and 39-45 have been considered but are moot in view of the new ground(s) of rejection. Examiner has discovered prior art which teaches previous allowable subject matter, therefore the previous allowable subject matter has been withdrawn.

14. Applicant's arguments, see applicant's remark on page 13, filed 1/14/2008, with respect to objection to the abstract have been fully considered and are persuasive. The objection of abstract has been withdrawn.

15. Applicant's arguments, see applicant's remark on page 13, filed 1/14/2008, with respect to 112nd rejection have been fully considered and are persuasive. The 112 2nd of claims12-13, 27-28, and 42-43has been withdrawn.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Areddu et al. (US2006/0193331)

Yamada et al. (US6940853)

Ervin et al. (US6438133)

Alicherry et al. (US20060291392)

Kimball et al. (US2007/0030804)

Wolff (US6185601)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WUTCHUNG CHU whose telephone number is (571)270-1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571 272 7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WC/
Wutchung Chu

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619